

YOU & MATHS Find the equation of the line through $(2, 4)$ with slope 6.

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The point-slope equation of a line through point (a, b) and with slope m is given by

$$y - b = m(x - a).$$

From the problem, we know that the line passes through point $(2, 4)$ and has $m = 6$. Therefore, if we substitute these numbers into the previous equation, we get:

$$y - 4 = 6(x - 2).$$

The equation of the line in slope-intercept form is then:

$$y - 4 = 6x - 12 \rightarrow y = 6x - 12 + 4 \rightarrow y = 6x - 8.$$

We can write the same equation in general form as follows:

$$6x - y - 8 = 0.$$